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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,009	08/22/2003	**Kevin W. Schneider**	710101.1060	8965

24504 7590 06/16/2008

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EXAMINER	
SHAND, ROBERTA A	
ART UNIT	**PAPER NUMBER**
2616	

MAIL DATE	DELIVERY MODE
06/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,009	SCHNEIDER ET AL.	
	Examiner	Art Unit	
	Roberta A. Shand	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *28* is/are allowed.

6)☒ Claim(s) *1-27,29 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-18, 20-27, 29 and 30 are rejected under 35 U.S.C. 103 (a) as being unpatentable over the admitted prior arts in view of Darveau (U.S. 6236726 B1).

3. Regarding claim 1, the admitted prior art teaches (fig. 1) a communication system, comprising: at least one central office transceiver (22); at least one intermediate terminal transceiver (36); a feeder distribution interface (33) coupled to the transceivers; at least two customer transceivers (31) coupled through the feeder distribution interface (33) to the at least one central office transceiver (22) and to the at least one intermediate terminal transceiver (36).

4. The admitted prior art does not teach memory for storing data based on an estimated distance between the at least one central office transceiver and the feeder distribution interface and an estimated distance between the at least one intermediate terminal transceiver and the feeder distribution interface; and logic configured to estimate a distance of a data path between the intermediate terminal transceiver and one of the customer transceivers, the logic further configured to adjust, based on the estimated distance, a power output of the at least one intermediate terminal transceiver in order to maintain a specified performance margin of the at least one central office transceiver.

5. Darveau teaches memory for storing data based on an estimated distance between the at least one central office transceiver and the feeder distribution interface and an estimated distance between the at least one intermediate terminal transceiver and the feeder distribution interface; (col. 9, line 60 - col. 10, line 2) estimating a distance of a data path between the intermediate terminal transceiver and one of the customer transceivers, the logic further configured to adjust (col. 2, lines 40-56), based on the estimated distance, a power output of the at least one intermediate terminal transceiver in order to maintain a specified performance margin of the at least one central office transceiver. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art to include Darveau's adjusting step to avoid data corruption (abstract).

6. Regarding claim 2, Darveau teaches (fig. 2) the logic resides within the intermediate terminal transceiver.

7. Regarding claims 3, 10 and 17, Darveau teaches (col. 10, lines 3-26) adjust the power output equally across a range of frequencies is reduced equally.

8. Regarding claims 4, 11 and 18, Darveau teaches (col. 10, lines 3-26) to adjust the power output of the at least one intermediate terminal differently for different frequencies.

9. Regarding claims 5, 12, 21 and 24, Darveau teaches (col. 9, line 60 - col. 10, line 2) a communication device configured to automatically provide the at least one intermediate terminal

transceiver with data indicative of an approximate distance between the at least one intermediate terminal transceiver and the feeder distribution interface, wherein the logic is further configured to adjust the power output of the at least one intermediate terminal transceiver based on the approximate distance.

10. Regarding claims 6, 8, 26 , 29 and 30, Darveau teaches (col. 9, line 60 - col. 10, line 2) automatically provide the at least one intermediate terminal transceiver with data indicative of an approximate distance between the at least one central office transceiver and the feeder distribution interface, and wherein the logic is further configured to adjust the power output of the at least one intermediate terminal transceiver based on the approximate distance between the at least one central office transceiver and the feeder distribution interface.

11. Regarding claim 7, the admitted prior art teaches (fig. 1) a data communication system having central office transceivers (25) residing at a central office (22) and intermediate terminal transceivers (38) residing at an intermediate terminal (36), the central office (22) and intermediate terminal transceivers coupled through a feeder distribution interface (33) to customer transceivers.

12. The admitted prior art does not teach means for determining distances between the transceivers and the feeder distribution interface; and power reduction means for automatically reducing a transmission power of at least one of the intermediate terminal transceivers, based on the determined distances, in order to maintain a specified performance margin for the central office transceivers.

13. Darveau teaches (col. 9, line 60 - col. 10, line 2) means for determining distances between the transceivers and the feeder distribution interface; and power reduction means for automatically reducing a transmission power (col. 2, lines 40-56) of at least one of the intermediate terminal transceivers, based on the determined distances, in order to maintain a specified performance margin for the central office transceivers. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art to include Darveau's adjusting step to avoid data corruption (abstract).

14. Regarding claim 9, the admitted prior art teaches (fig. 1) a system for communicating between transceivers, comprising: a transmitter configured to transmit signals to a customer transceiver (31) over a first communication connection that is bound within a binder (page 2, paragraph 4).

15. The admitted prior art does not teach logic configured to estimate a distance of a data path between the transmitter and the customer transceiver based on at least one signal communicated over the data path, the logic further configured to adjust a transmission power level of the transmitter based on the estimated distance such that signals transmitted by the transmitter to the customer transceiver are spectrally compatible with signals transmitted from another transceiver over a second communication connection.

16. Darveau teaches (col. 9, line 60 - col. 10, line 2) estimate a distance of a data path between the transmitter and the customer transceiver based on at least one signal communicated over the data path, the logic further configured to adjust (col. 2, lines 40-56) a transmission power level of the transmitter based on the estimated distance such that signals transmitted by

the transmitter to the customer transceiver are spectrally compatible with signals transmitted from another transceiver over a second communication connection. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art to include Darveau's adjusting step to avoid data corruption (abstract).

17. Regarding claims 13 and 22, Darveau teaches (col. 9, line 60 - col. 10, line 2) a receiver configured to receive at least one signal transmitted from the customer transceiver over the data path, wherein the logic is configured to estimate the distance based on the at least one received signal.

18. Regarding claim 14, Darveau teaches (fig. 2) the first and second communication connections are coupled to a feeder distribution interface, wherein the logic and the transmitter reside within a transceiver installed at an intermediate terminal.

19. Regarding claim 15, Darveau teaches (col. 9, line 60 - col. 10, line 2) the system further comprises a communication device that is configured to provide, to the logic, data indicative of a distance between the intermediate terminal and the feeder distribution interface, and wherein the logic is further configured to determine a transmission power level for the transmitter based on the data and the estimated distance

20. Regarding claim 16, the admitted prior art teaches (fig. 1) a communication method, comprising the steps of establishing a communication session between a first transceiver (22)

and a second transceiver (31); communicating, during a training phase of the communication session, at least one signal between the first and second transceivers over a first communication connection that is bound via a binder (33),

21. The admitted prior art does not teach transmitting at least one signal from the first transceiver at a default power level; estimating a distance of a data path between the first and second transceivers based on at least one signal communicated in the communicating step; adjusting a transmission power level for the first transceiver based on the estimated distance such that signals transmitted by the first transceiver over the data path at the adjusted transmission power level are spectrally compatible with signals transmitted by another transceiver over a second communication connection; and transmitting at least one signal from the first transceiver at the adjusted transmission power level during a data phase of the communication session.

22. Darveau teaches (col. 9, line 60 - col. 10, line 2) transmitting at least one signal from the first transceiver at a default power level; estimating a distance of a data path between the first and second transceivers based on at least one signal communicated in the communicating step; adjusting (col. 2, lines 40-56) a transmission power level for the first transceiver based on the estimated distance such that signals transmitted by the first transceiver over the data path at the adjusted transmission power level are spectrally compatible with signals transmitted by another transceiver over a second communication connection; and transmitting at least one signal from the first transceiver at the adjusted transmission power level during a data phase of the communication session (col. 9, line 60 - col. 10, line 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art to include Darveau's adjusting step to avoid data corruption (abstract).

23. Regarding claim 20, the admitted prior art teaches (fig. 1) a method for providing spectrum management in a data communication system having central office transceivers (25) and intermediate terminal transceivers (38) coupled through a feeder distribution interface (33) to customer transceivers,

24. The prior art does not teach automatically determining at least one distance between the transceivers and the feeder distribution interface; and automatically adjusting, based on the determined distance, a transmission power of at least one of the intermediate terminal transceivers in order to maintain a specified performance margin for the central office transceivers.

25. Darveau teaches (col. 9, line 60 - col. 10, line 2) automatically determining at least one distance between the transceivers and the feeder distribution interface; and automatically adjusting (col. 2, lines 40-56), based on the determined distance, a transmission power of at least one of the intermediate terminal transceivers in order to maintain a specified performance margin for the central office transceivers. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art to include Darveau's adjusting step to avoid data corruption (abstract).

26. Regarding claim 23, the admitted prior art teaches (fig. 1 and abstract) a method of maintaining specified performance margins in a data communication system having central office transceivers (25) and intermediate terminal transceivers (38) coupled through a feeder distribution interface (33) to customer transceivers.

27. The admitted prior art does not teach providing a table of power back-off values for adjusting transmission power levels of the intermediate terminal transceivers in order to maintain performance margins of the central office transceivers, wherein the power back-off values are functions of distances between the transceivers and the feeder distribution interface; automatically determining distances between the intermediate terminal transceivers and the customer transceivers based on signals communicated between the intermediate terminal transceivers and the customer transceivers; and adjusting, based on the determined distances, the transmission power levels of the customer transceivers in accordance with the values in the table.

28. Darveau teaches (col. 9, line 60 – col. 10, line 2) providing a table of power back-off values for adjusting transmission power levels of the intermediate terminal transceivers in order to maintain performance margins of the central office transceivers, wherein the power back-off values are functions of distances between the transceivers and the feeder distribution interface; automatically determining distances between the intermediate terminal transceivers and the customer transceivers based on signals communicated between the intermediate terminal transceivers and the customer transceivers; and adjusting (col. 2, lines 40-56), based on the determined distances, the transmission power levels of the customer transceivers in accordance with the values in the table. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art to include adapt Darveau's adjusting step to avoid data corruption (abstract).

29. Regarding claim 25, the admitted prior art teaches (fig. 1) a method for reducing crosstalk in a data communication system having central office transceivers (25) residing at a central

office (22) and intermediate terminal transceivers (38) residing at an intermediate terminal (36), the central office transceivers (38) and intermediate terminal transceivers (25) coupled through a feeder distribution interface (33) to customer transceivers (31),

30. The admitted prior art does not teach storing values indicative of an approximate distance between the central office and the feeder distribution interface and of an approximate distance between the intermediate terminal and the feeder distribution interface; automatically determining values indicative of approximate distances between the intermediate terminal transceivers and the customer transceivers; and reducing transmission power levels at all frequencies in the intermediate terminal transceivers in accordance with a power back-off algorithm, wherein the power back-off algorithm is responsive to the stored and determined values.

31. Darveau teaches (col. 9, line 60 – col. 10, line 2) storing values indicative of an approximate distance between the central office and the feeder distribution interface and of an approximate distance between the intermediate terminal and the feeder distribution interface; automatically determining values indicative of approximate distances between the intermediate terminal transceivers and the customer transceivers; and reducing (col. 2, lines 40-56) transmission power levels at all frequencies in the intermediate terminal transceivers in accordance with a power back-off algorithm, wherein the power back-off algorithm is responsive to the stored and determined values. It would have been obvious to one of ordinary skill in the art to adapt Darveau's adjusting step to the admitted prior art to avoid data corruption (abstract).

32. Regarding claim 27, the admitted prior art teaches (fig. 1) a communication method, comprising the steps of transmitting a signal from at least one intermediate terminal transceiver (36) through a cable to a customer transceiver (31), the cable coupled to a feeder distribution interface (33) that is coupled to the at least one intermediate terminal transceiver (36) and at least one central office transceiver (22), the cable propagating at least one signal transmitted from the at least one central office transceiver (22).

33. The admitted prior art does not teach automatically adjusting a power output of the at least one intermediate terminal transceiver such that a specified performance margin of the at least one central office transceiver is maintained; and estimating a distance between the at least one intermediate terminal transceiver and the customer transceiver, wherein the adjusting is further based on the estimated distance.

34. Darveau teaches (col. 2, lines 40-56) automatically adjusting a power output of the at least one intermediate terminal transceiver such that a specified performance margin of the at least one central office transceiver is maintained; and estimating a distance (col. 9, line 60 – col. 10, line 2) between the at least one intermediate terminal transceiver and the customer transceiver, wherein the adjusting is further based on the estimated distance. It would have been obvious to one of ordinary skill in the art to adapt Darveau's adjusting step to avoid data corruption (abstract).

35. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Darveau (U.S. 6236726 B1) and further in view of Terry (U.S. 6339613 B2).

36. As mentioned above, the admitted prior art and Darveau teach all of the limitations of claim 16.

37. Although Darveau teaches sending distance information. The admitted prior art and Darveau do not teach installing new transceivers.

38. Terry teaches (col. 12, lines 47-55) installing new devices and adjusting the power spectral densities to reduce crosstalk. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art and Darveau's to include Terry's installation of new devices to provide a method that can permit new communications systems to be added to existing communications paths in a manner that is generally compatible with existing systems where these exist, and that can make optimum use of communications capacity (col. 2, lines 26-31).

Allowable Subject Matter

39. Claim 28 is allowed.

Response to Arguments

40. Applicant's arguments filed February 28, 2008 have been fully considered but they are not persuasive. Applicant argues that Darveau fails to suggest that the ***transmit power*** of any of the subscriber units should be based on an estimated distance for any of the other subscriber units. This limitation is no claimed by the applicant. Applicant's claim recites "adjust, based on

the estimated distance and the data, a power output of the at least one intermediate terminal transceiver". This limitation is met by Darveau (col. 9, line 60 – col. 10, line 2).

41. Applicant also argues that Darveau does not teach ensuring that signals transmitted by the intermediate terminal are spectrally compatible with signals transmitted by the central office transceivers. Spectral compatibility is taught in Darveau's system because Darveau teaches avoiding interference or crosstalk between weaker and stronger signals, and adjusting the signal strength to accomplish such, abstract and col. 2, lines 18-27.

Conclusion

42. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

43. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

44. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberta A. Shand whose telephone number is 571-272-3161. The examiner can normally be reached on M-F 9:00am-5:30pm.

45. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

46. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Roberta A. Shand
/R. A. S./
Examiner, Art Unit 2616

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Supervisory Patent Examiner, Art Unit 2616